

Appl. No.: 10/034,817
Amendment Dated January 28, 2005
Reply to Office Action of September 28, 2004

Amendments to the Claims:

1. (Currently Amended) A nonwoven fabric which comprises:
a first fibrous layer defining one outer surface of the fabric and a second fibrous layer defining an opposite outer surface of the fabric;
the first fibrous layer comprising a blend of bicomponent or biconstituent fibers including a first component of a relatively higher fusion point ~~first polymer~~ polypropylene and a second component of a lower fusion point ~~second polymer~~ polyethylene, and monocomponent fibers formed of said relatively higher fusion point polypropylene; and
the second fibrous layer comprising fibers of said relatively higher fusion point ~~first polymer~~ polypropylene; and
a pattern of discrete fusion bonds bonding the fibers of the first layer and the fibers of the second layer to form a coherent multi-layer fabric,
wherein said fusion bonds are formed by passing the fabric through a calender nip defined between a smooth calender roll and a patterned calender roll, and wherein said bonds exhibit on said one outer surface a relatively non-indented configuration resulting from contact with said smooth calender roll, and wherein the bonds on said opposite surface of the fabric exhibit a relatively indented embossed configuration resulting from contact with said patterned calender roll.
2. (Original) A nonwoven fabric according to claim 1, wherein said first and second layers of fibers are bonded directly to one another by said fusion bonds.
3. (Original) A nonwoven fabric according to claim 1, including at least one additional layer located between said first and second fibrous layer.
4. (Original) A nonwoven fabric according to claim 3, wherein at least one additional layer comprises meltblown microfibers.
5. (Original) A nonwoven fabric according to claim 1, wherein the first fibrous layer comprises from 10 to 100 percent by weight of said bicomponent or biconstituent fibers.

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6. (Original) A nonwoven fabric according to claim 1, wherein at least one of said first and second fibrous layers is a spunbonded web.

7. (Currently Amended) A nonwoven fabric according to claim 1, ~~wherein the first fibrous layer comprises a blend of mono-component fibers formed of said relatively higher fusion point first polymer, and~~ wherein the second fibers are sheath-core bicomponent fibers in which said relatively higher fusion point ~~first polymer~~ polypropylene is located in the core and said lower fusion point ~~second polymer~~ polyethylene is located in the sheath.

8. (Original) A nonwoven fabric according to claim 7, wherein the relatively higher fusion point first polymer is polypropylene and the lower fusion point second polymer is polyethylene.

9. (Previously Amended) A nonwoven fabric which comprises:
a first layer of carded staple fibers defining one outer surface of the fabric;
a second layer of carded staple fibers defining an opposite outer surface of the fabric; and
a pattern of discrete fusion bonds bonding the fibers of the first layer and the fibers of the second layer to form a coherent multi-layer fabric;
the fibers of the first layer comprising a substantially homogeneous blend of polypropylene staple fibers and polyethylene/polypropylene bicomponent or biconstituent staple fibers in which the polyethylene component is present at the surface of the fibers; and
the fibers of the second layer comprising polypropylene staple fibers,
wherein said fusion bonds are formed by passing the fabric through a calender nip defined between a smooth calender roll and a patterned calender roll, and wherein said bonds exhibit on said one outer surface a relatively non-indented configuration resulting from contact with said smooth calender roll, and wherein the bonds on said opposite surface of the fabric exhibit a relatively indented embossed configuration resulting from contact with said patterned calender roll.

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10. (Original) A nonwoven fabric according to claim 9, wherein said first and second layers of fibers are bonded directly to one another by said thermal bonds.

11. (Original) A nonwoven fabric according to claim 9, wherein the fibers of the first layer comprise a blend of polypropylene staple fibers and polyethylene-polypropylene sheath-core bicomponent fibers in which the polyethylene component is the sheath and the polypropylene component is the core.

12. (Original) A nonwoven fabric according to claim 9, wherein said first layer comprises from 40% to 100% by weight of said sheath core bicomponent fibers and from 0 to 60% by weight of said polypropylene fibers, and wherein said first layer of fibers comprises approximately 40% to 60% by weight of said fabric.

13. (Cancelled)

14. (Previously Amended) A nonwoven fabric which comprises:
a first layer of carded staple fibers defining one outer surface of the fabric;
a second layer of carded staple fibers defining an opposite outer surface of the fabric; and
a pattern of discrete thermal bonds bonding the fibers of the first layer and the fibers of the second layer to form a coherent multi-layer fabric;
the fibers of the first layer comprising a substantially homogeneous blend of about 50% by weight polypropylene staple fibers and 50% by weight polyethylene/polypropylene sheath-core bicomponent staple fibers; and
the fibers of the second layer comprising 100% polypropylene staple fibers,
wherein said bonds are formed by passing the fabric through a calender nip defined between a smooth calender roll and a patterned calender roll, and wherein said bonds exhibit on said one outer surface a relatively non-indented configuration resulting from contact with said smooth calender roll, and wherein the bonds on said opposite surface of the fabric exhibit a relatively indented embossed configuration resulting from contact with said patterned calender roll.

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15. (Original) An article of manufacture comprising two nonwoven fabrics according to claim 1, positioned with said one outer surface thereof in opposing face-to-face contact with one another and including a zone of thermal fusion defining a seam joining the two fabrics together.

16. (Withdrawn) A method of making a nonwoven fabric comprising:
forming a fibrous web comprising bicomponent or biconstituent fibers including a first component of a relatively higher fusion point first polymer and a second component of a lower fusion point second polymer;

forming a second fibrous web comprising fibers of; said relatively higher fusion point first polymer,

combining said first and second webs to form a multi-layer web with said first web defining one outer surface and said second web defining an opposite outer surface;

directing the multi-layer web through a heated calender nip defined between a smooth calender roll and a patterned calender roll, with said first web oriented to contact said smooth calender roll and with said second web oriented to contact said patterned calender roll, and heating the webs to form thermal bonds bonding the fibers of the first web and the fibers of the second web and to unite the layers to form a coherent fabric.

17. (Withdrawn) A method according to claim 16, including heating the patterned roll to a higher temperature than the smooth roll.

18. (Withdrawn) A method of making a nonwoven fabric comprising:
forming a first carded web of staple fibers comprising a blend of polypropylene fibers and polyethylene/polypropylene sheath-core bicomponent staple fibers;

forming a second carded web of polypropylene staple fibers;

combining said first and second webs to form a multi-layer web with said first web defining one outer surface and said second web defining an opposite outer surface;

directing the multi-layer web through a heated calender nip defined between a smooth calender roll and a patterned calender roll, with said first web oriented to contact said smooth calender roll and with said second web oriented to contact said patterned calender roll,

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and heating the webs to form thermal bonds bonding the fibers of the first web and the fibers of the second web and to unite the layers to form a coherent fabric.

19. (Withdrawn) A method according to claim 17, including heating the patterned roll to a higher temperature than the smooth roll.

20. (Withdrawn) A method according to claim 17, wherein the patterned roll is heated to a temperature about 5 to 40 degrees F. greater than the average temperature of the two rolls and the smooth roll is heated to a temperature about 5 to 40 degrees F. lower than the average temperature.